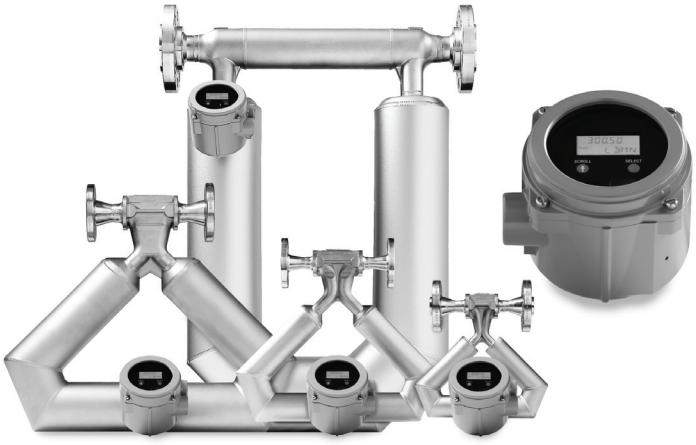
Product Data Sheet
PS-001096, Rev. A
September 2008

Micro Motion® 2-Wire Coriolis Flow and Density Meter with MVD™ Technology

The Micro Motion® Model 2200S 2-wire transmitter enables the use of reliable and accurate ELITE® Coriolis meters virtually anywhere in your plant. The 2-wire Coriolis meter delivers measurement accuracy, repeatability, and operational savings on a level not previously possible in loop-powered applications.



Reduce installation costs and increase measurement reliability

- Replace existing 2-wire flow devices with minimal effort and without incurring additional power or cabling costs
- Low energy, loop-powered design enables easy integration of Coriolis into existing processes for improved measurement and reduced maintenance for an even greater number of flow points
- Simplify the complexity and improve the performance of new process plants with loop-powered mA output and HART protocol 2-wire Coriolis
- Compact, integral 2-wire transmitter design saves electrical cost and space for use on integrated systems and skids
- Direct mass measurement improves process control while reducing number of measurement devices required
- Accurate, repeatable measurement ensures higher quality production and overall improved process profitability

Micro Motion®

EMERSON™
Process Management

Micro Motion 2-wire Coriolis flow and density meter

Utilizing Micro Motion MVD technology, the Micro Motion Model 2-wire Coriolis meter delivers multivariable and diagnostic information via HART® communications. Comprised of a cutting-edge Model 2200S transmitter and the proven best-in-class performance of an ELITE® Coriolis meter, the Micro Motion 2-wire meter brings reduced costs through improved process consistency and maximized uptime. Micro Motion 2-wire Coriolis is ideally suited for use in the chemical, petrochemical and refining industries, and for continuous process and mass balance applications.

MVD technology. MVD technology makes your Micro Motion flowmeter work smarter. Front-end digital processing dramatically reduces signal noise and gives you faster response time compared to analog devices.

Only MVD technology allows you to:

- Measure multiple variables for accurate process control
- Identify and resolve problems easily with built-in smart diagnostics
- Flexible architecture enables tuning for your application needs
- Upgrade transmitter functionality as needed, without impacting availability

Model 2200S transmitters. The Model 2200S transmitter is suitable for a range of process conditions, including CSA Class I Div. 1 and ATEX Zone 1 approvals. To facilitate installation in hazardous areas, Micro Motion offers an adapter-barrier. Finally, the Micro Motion Model 2200S is also available with an optional 316L stainless steel enclosure suited for harsh environments, such as applications in the offshore and marine industries.

ELITE Coriolis meter. Micro Motion ELITE meters offer accurate measurement for virtually any process fluid, while exhibiting exceptionally low pressure drop. Every ELITE meter features standard secondary containment, and is available with stainless steel or nickel-alloy wetted parts and a wide variety of process connections to meet your every need.

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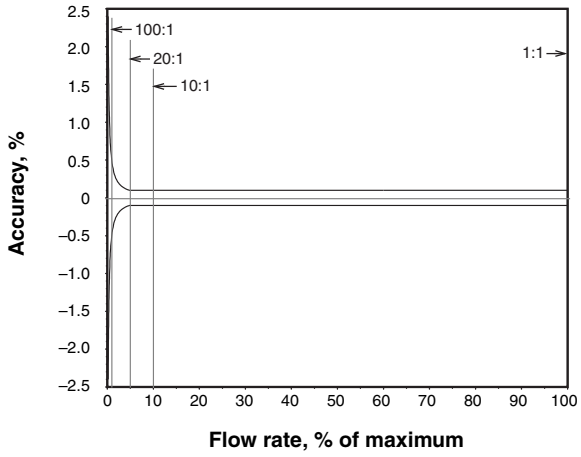
Liquid flow performance

		Mass	Volume[1]
		kg/h	l/h
Maximum flow rate	CMF025	2180	2180
	CMF050	6800	6800
	CMF100	27200	27200
	CMF200	87100	87100
Mass and volume flow accuracy[2]	±0,10% of rate[3]		
Mass and volume flow repeatability	±0,05% of rate[3]		
		kg/h	
Zero stability	CMF025	0,027	
	CMF050	0,163	
	CMF100	0,680	
	CMF200	2,18	

Typical accuracy and turndown

The graph below is an example of the relationship between accuracy and turndown on water. To determine actual accuracy and turndown with your process variables, use the Micro Motion product selector, available at **www.micromotion.com**.

Turndown	*500:1*	*100:1*	*20:1*	*10:1*	*1:1*
Accuracy (±%)	2,40	0,50	0,10	0,10	0,10



(1) Specifications for volumetric flow rate are based on a process-fluid density of 1000 kg/m³. For fluids with density other than 1000 kg/m³, the volumetric flow rate equals the mass flow rate divided by the fluid's density.

(2) Stated flow accuracy includes the combined effects of repeatability, linearity, and hysteresis. All specifications for liquids are based on reference conditions of water at 20 to 25 °C and 1 to 2 bar, unless otherwise noted.

(3) When flow rate is less than zero stability / 0,001, accuracy = ±[(zero stability / flow rate) × 100]% of rate and repeatability = ±[½(zero stability / flow rate) × 100]% of rate.

Gas flow performance

When selecting sensors for gas applications, measurement accuracy is a function of fluid mass flow rate independent of operating temperature, pressure, or composition. However, pressure drop through the sensor is dependent upon operating temperature, pressure, and fluid composition. Therefore, when selecting a sensor for any particular gas application, it is highly recommended that each sensor be sized using the Micro Motion product selector, available at **www.micromotion.com**.

	Mass	**Volume[1]**
	kg/h	Nm^3/h
Flow rates that produce approximately 0,68 bar pressure drop on *air* at 20 °C and 6,8 bar		
CMF025	110	90
CMF050	300	230
CMF100	1300	1000
CMF200	4000	3100
Flow rates that produce approximately 3,4 bar pressure drop on *natural gas* (MW 16,675) at 20 °C and 34,0 bar		
CMF025	450	600
CMF050	1140	1530
CMF100	5000	6700
CMF200	15200	20500

Mass flow accuracy[2] ±0,35% of rate[3]

Mass flow repeatability ±0,20% of rate[3]

Zero stability Refer to liquid flow specifications on page 3.

(1) Normal (Nm^3/h) reference conditions are 1,013 bar and 0 °C.

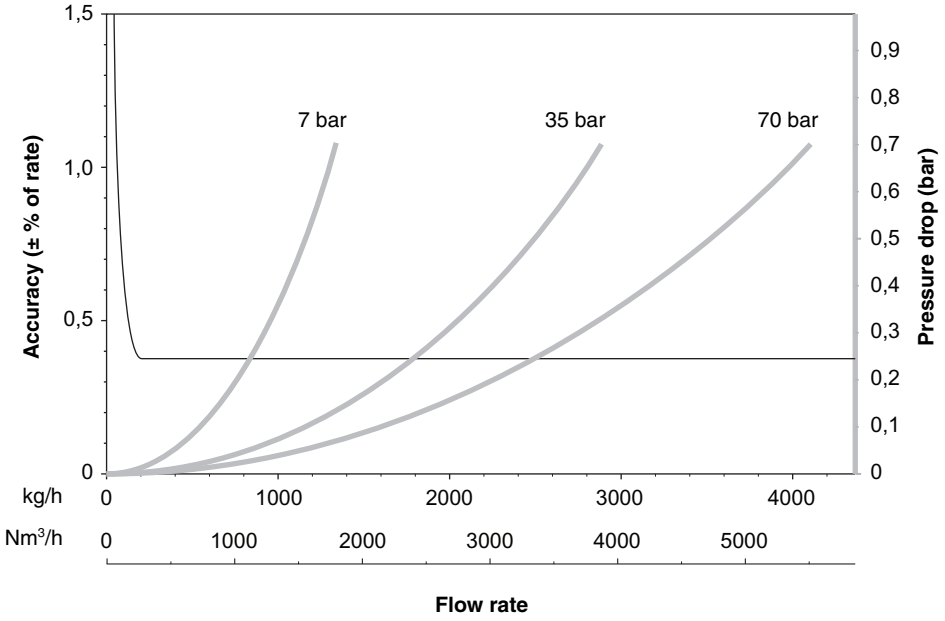
(2) Flow accuracy includes the combined effects of repeatability, linearity, and hysteresis.

(3) When flow rate is less than zero stability / 0,0035, accuracy equals ±[(zero stability / flow rate) × 100]% of rate and repeatability equals ±[½(zero stability / flow rate) × 100]% of rate.

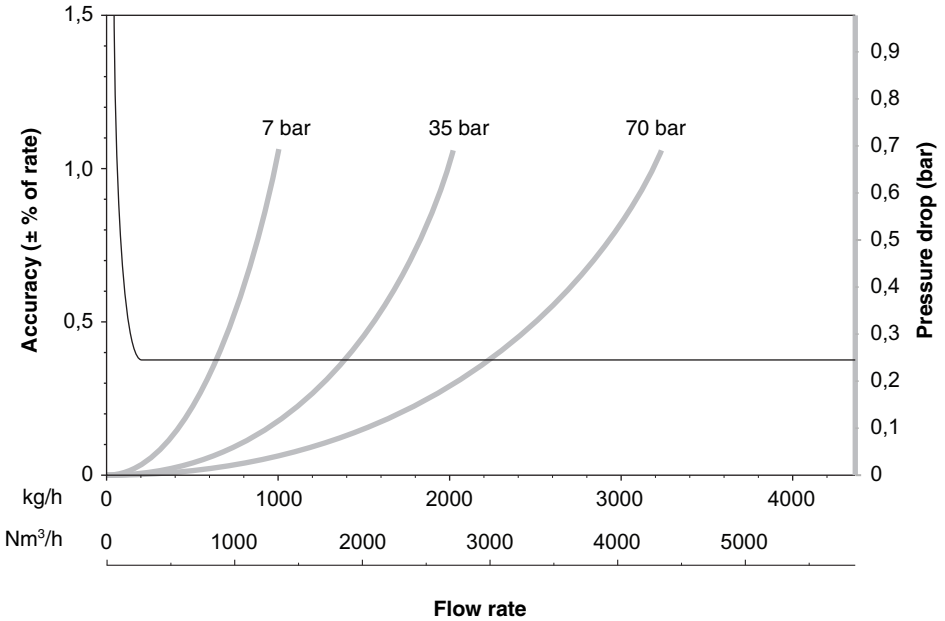
Gas flow performance *continued*

Typical mass flow accuracy and pressure drop with CMF100 and transmitter with MVD Technology

Air at 20 °C, static pressures as indicated on graph



Natural gas (MW 16,675) at 20 °C, static pressure as indicated on graph



Standard or Normal Volumetric Capability

Standard and normal volumes are “quasi mass” flow units for any fixed composition fluid. Standard and normal volumes do not vary with operating pressure, temperature, or density. With knowledge of density at standard or normal conditions (available from reference sources), a Micro Motion meter can be configured to output in standard or normal volume units without the need for pressure, temperature, or density compensation. Contact your local sales representative for more information.

Density performance (liquid only)

	kg/m^3
Accuracy(1)	±0,5
Repeatability	±0,2
Range	up to 5000

(1) Accuracy includes the combined effects of repeatability, linearity, and hysteresis. Accuracy specifications are based on reference conditions of water at 20 to 25 °C and 1 to 2 bar, unless otherwise noted.

Pressure ratings

Sensor rating(1)		**316L and 304L stainless steel**	**Hastelloy C-22**
		bar	bar
	CMF025	103	190
	CMF050	103	185
	CMF100	100	170
	CMF200	108	190

PED compliance	Sensors comply with council directive 97/23/EC of 29 May 1997 on Pressure Equipment
Dual seal compliance	CSA sensors comply with ANSI/ISA 12.27.01-2003 requirements for process sealing between electrical systems and flammable or combustible process fluids

Housing rating		**ASME B31.3 secondary containment rating**(2)	**Burst pressure**
		bar	bar
	CMF025	58	377
	CMF050	58	364
	CMF100	43	227
	CMF200	37	192

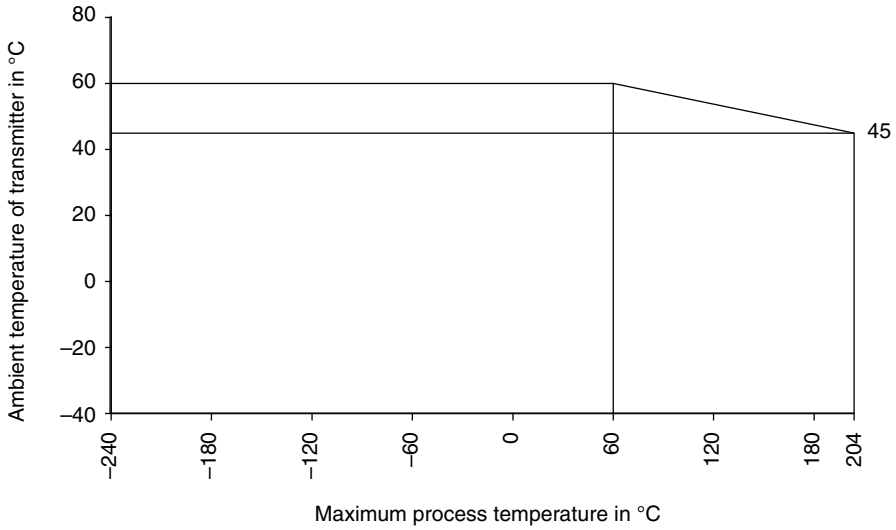
(1) Process connection rating may differ from sensor rating. Please choose process connections accordingly.

(2) For operating temperatures above 148 °C, pressure needs to be derated as follows. Linear interpolation may be used between values. Process connection derating may differ from sensor rating.

	Flow tubes			***Housing***
	316L sensors	***304L sensors***	***Hastelloy C-22 sensors***	***All sensors***
up to 148 °C	*None*	*None*	*None*	*None*
at 204 °C	*7,2% derating*	*5,4% derating*	*None*	*5,4% derating*

Temperature and humidity specifications

Accuracy	All models	±1 °C ± 0,5% of reading in °C
Repeatability	All models	±0,2 °C
Temperature limits[1]	For transmitter, adapter-barrier, and all sensor models[2]	



* *When ambient temperature is below –40 °C, the transmitter must be heated to bring its local ambient temperature to between –40 °C and +60 °C. Long-term storage of electronics at ambient temperatures below –40 °C is not recommended.*
* *This graph should be used only as a general guide.*
* *Below –20 °C, LCD responsiveness decreases and LCD may become difficult to read. Above 55 °C, some darkening of the LCD panel may occur.*

Humidity limits	5 to 95% relative humidity, non-condensing at 60 °C	

(1) Temperature limits may be further restricted by hazardous area approvals. See page 9.

(2) The temperature limits shown apply when the electronics are not covered (for example, by insulation). If the sensor case must be insulated, use extended mount electronics.

Environmental effects

Process temperature effect

Process temperature effect is defined as:

- For mass flow measurement, the worst-case zero offset due to process fluid temperature change away from the zeroing temperature.
- For density measurement, the maximum measurement offset due to process fluid temperature change away from the density calibration temperature.

	Process temperature effect		
	% of maximum flow rate per °C	density accuracy per °C[1]	
		g/cm^3	kg/m^3
CMF025	±0,0001250	±0,000015	±0,015
CMF050	±0,0001250	±0,000015	±0,015
CMF100	±0,0001250	±0,000015	±0,015
CMF200	±0,0005000	±0,000015	±0,015

Ambient temperature effect

On mA output: ±0,005% of span per °C

Pressure effect

Pressure effect is defined as the change in sensor flow and density sensitivity due to process pressure change away from the calibration pressure. Pressure effect can be corrected.

	Pressure effect on flow accuracy			
	% of rate per psi		% of rate per bar	
	liquid	*gas*	*liquid*	*gas*
CMF025	None	None	None	None
CMF050	None	None	None	None
CMF100	–0,0002	None	–0,003	None
CMF200	–0,0008	–0,0004	–0,012	–0,006

	Pressure effect on density accuracy	
	g/cm^3 per psi	kg/m^3 per bar
CMF025	0,000004	0,058
CMF050	–0,000002	–0,029
CMF100	–0,000006	–0,087
CMF200	0,000001	0,0145

EMI effects

Complies with EMC directive 2004/108/EC per EN 61326 Industrial
Conforms to NAMUR NE21 Version: 08.22.2007

Vibration limits

Meets IEC 68.2.6, endurance sweep, 5 to 2000 Hz, 50 sweep cycles at 1,0 g

(1) For –100 °C and above.

Hazardous area classifications

ELITE sensor with Model 2200S transmitter

CSA C-US

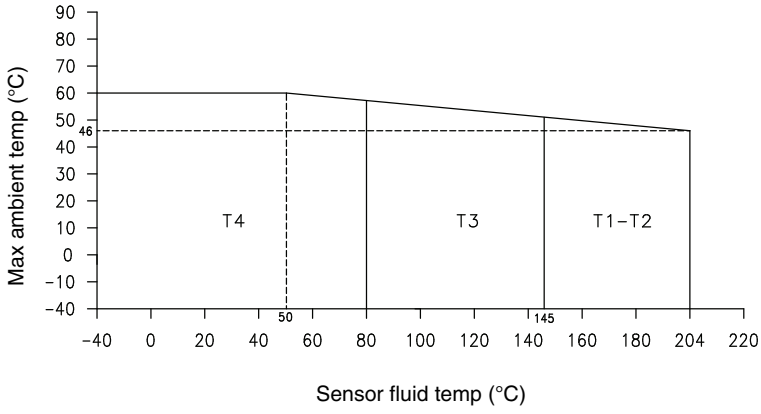
All models	Ambient temperature –40 to +60 °C Class I, Div. 1, Groups C and D Class I, Div. 2, Groups A, B, C, and D Class II, Div. 1, Groups E, F, and G

IECEx

Models CMF025, CMF050, and CMF100	Ex ib IIC T4 Ex nA II T4
Model CMF200	Ex ib IIB T4 Ex nA II T4

ATEX

Models CMF025, CMF050, and CMF100	CE 0575 ⟨Ex⟩ II 2G Ex ib IIC T4 II 2D Ex tD A21 ibD IP66/67 T70 °C II 3G Ex nA II T4 II 3D Ex tD A22 IP66/67 T70 °C
Model CMF200	CE 0575 ⟨Ex⟩ II 2G Ex ib IIB T4 II 2D Ex tD A21 ibD IP66/67 T70 °C II 3G Ex nA II T4 II 3D Ex tD A22 IP66/67 T70 °C



Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature. The maximum surface temperature for dust is as follows: T4:T 130°C, T3:T 195°C, T2 to T1:T 254°C.

Ambient temperature range Ta –40 °C to +60 °C

Hazardous area classifications *continued*

Adapter-barrier

CSA C-US

Class I, Div. 1, Groups C and D[1]
Class I, Div. 2, Groups A, B, C, and D
Class II, Div. 2, Groups F and G

IECEx

[Ex ib] IIB/IIC

ATEX

CE 0575 ⟨Ex⟩ II (2) G [Ex ib] IIB/IIC
II (2) D [Ex ibD]

(1) When installed in a suitable enclosure.

Physical specifications

Wetted parts[1]	316L or 304L stainless steel, or Hastelloy C-22
Sensor housing	304L stainless steel[2]
Transmitter housing	Integral mount or extended mount NEMA 4X (IP67) polyurethane-painted cast aluminum or 316L stainless steel Available with 1/2"–NPT or M20 × 1,5 conduit connections The transmitter can be rotated on the mounting in 45° increments, for eight different orientations.
Adapter-barrier	IP20 housing DIN rail mounting type: DIN 46277 Can be stacked side-to-side

(1) General corrosion guides do not account for cyclical stress, and therefore should not be relied upon when choosing a wetted material for your Micro Motion sensor. Please refer to the Micro Motion corrosion guide for proper material compatibility information.

(2) 316L stainless steel is available.

Weight

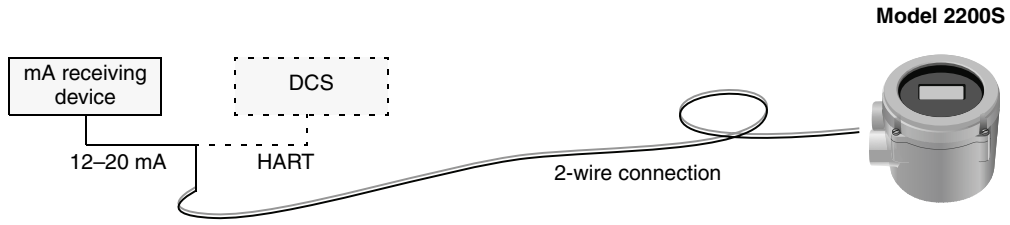
		kg
Sensor and transmitter[1]	CMF025	6
	CMF050	8
	CMF100	16
	CMF200	31
Adapter-barrier		0,15

(1) Weight of sensor and polyurethane-painted aluminum transmitter with ANSI CL150 welded flanges. For stainless steel transmitter, add 2 kg.

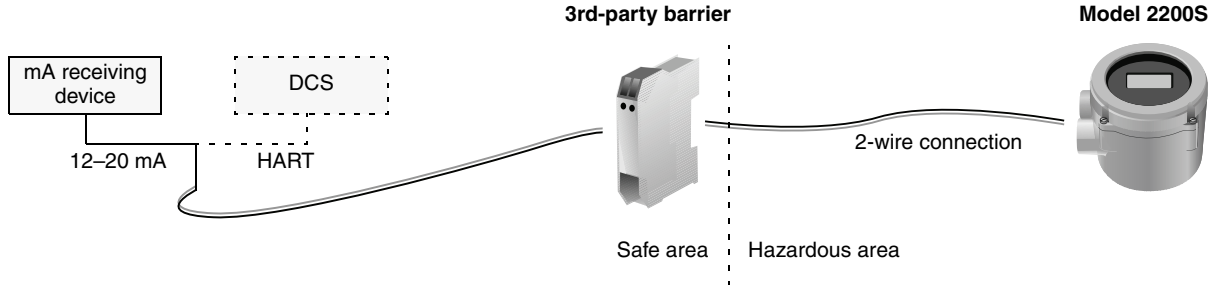
Micro Motion adapter-barrier

The Micro Motion adapter-barrier provides Class I, Div. 1 and Zone 1 intrinsic safety protection, and re-spans the I/O signal from 12–20 mA to 4–20 mA.

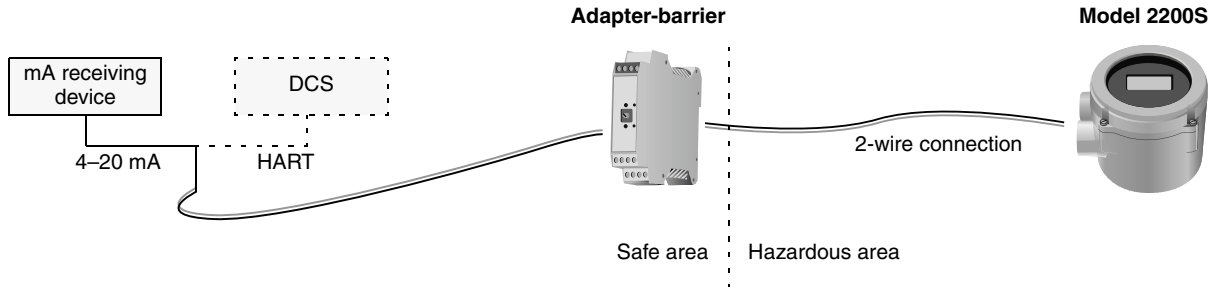
Transmitter to host with no barrier



Transmitter to host with third-party barrier



Transmitter to host with Micro Motion adapter-barrier



Input/output signals and power supply

Transmitter

One passive 12–20 mA output
- Isolated to ±50 VDC from earth ground
- Maximum load limit: 600 Ω
- External power: 17–36 VDC
- 0,8 W maximum
- Can report mass flow, liquid volume flow, gas standard volume flow, density, temperature, or drive gain
- Output is linear with process from 11,9 to 20,25 mA

Adapter-barrier

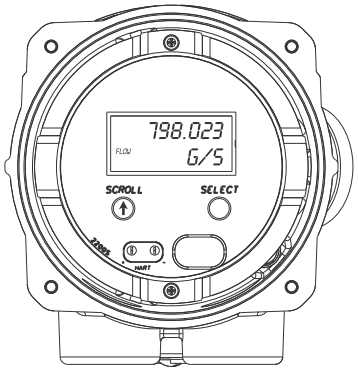
Power supply
- 18–42 VDC
- Maximum supply current: 170 mA
- Maximum power: 3 W

One active or passive 4–20 mA output
- Maximum load limit (active output): < 1 kΩ
- Maximum loop voltage (passive input): < 36 V
- Linearity: < 0.05% span

One passive 12–20 mA input
- HART pass-through
- Loop supply: > 25 V
- HART-compliant impedance: > 250 Ω
- Compliant with ATEX, CSA, and IECEx intrinsic safety requirements

Conforms to NAMUR NE21 Version 08.22.2007

User interface



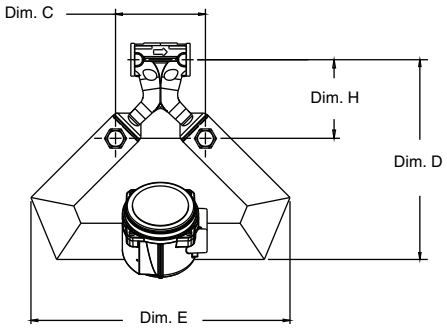
Standard user interface with LCD panel
- Suitable for hazardous area installation.
- User interface module can rotate 360° on the transmitter in 90° increments.
- Two clips for HART/Bell 202 connections (requires removing transmitter housing cover).
- Two membrane pushbuttons for local operation (requires removing transmitter housing cover).
- Depending on purchase option, transmitter housing cover has glass or plastic lens.
- User interface module includes LCD panel. LCD line 1 displays process variable; line 2 displays engineering unit of measure, with optional alarm indication.
- LCD panel can be configured to scroll through display list at user-specified scroll rate. Display list includes user-selected process variables and, optionally, all active alarms.
- Display update rate is user-configurable: 100 to 10000 milliseconds.

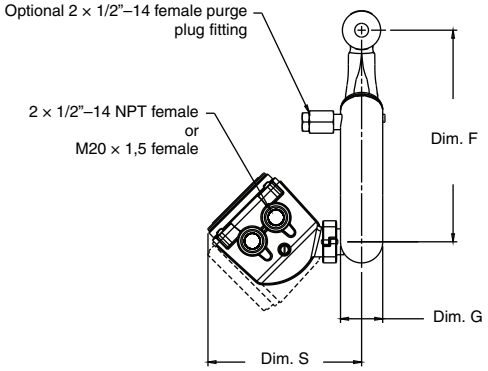
Dimensions

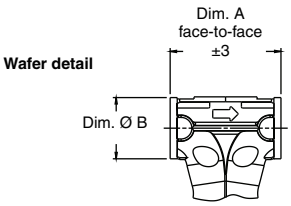
Models CMF025, CMF050, and CMF100

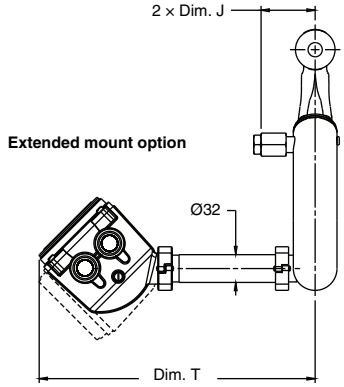
Dimensions in mm

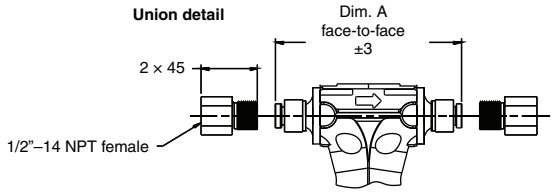
Flow

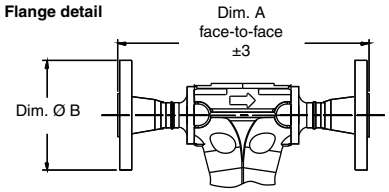












	Dimensions[1]								
Model	**C**	**D**	**E**	**F**	**G**	**H**	**J**	**S[2]**	**T[2]**
CMF025	72	209	255	188	41	85	58	179 – 192	318 – 325
CMF050	126	280	364	255	51	111	63	185 – 192	322 – 324
CMF100	150	405	546	360	91	136	83	204 – 213	340 – 346

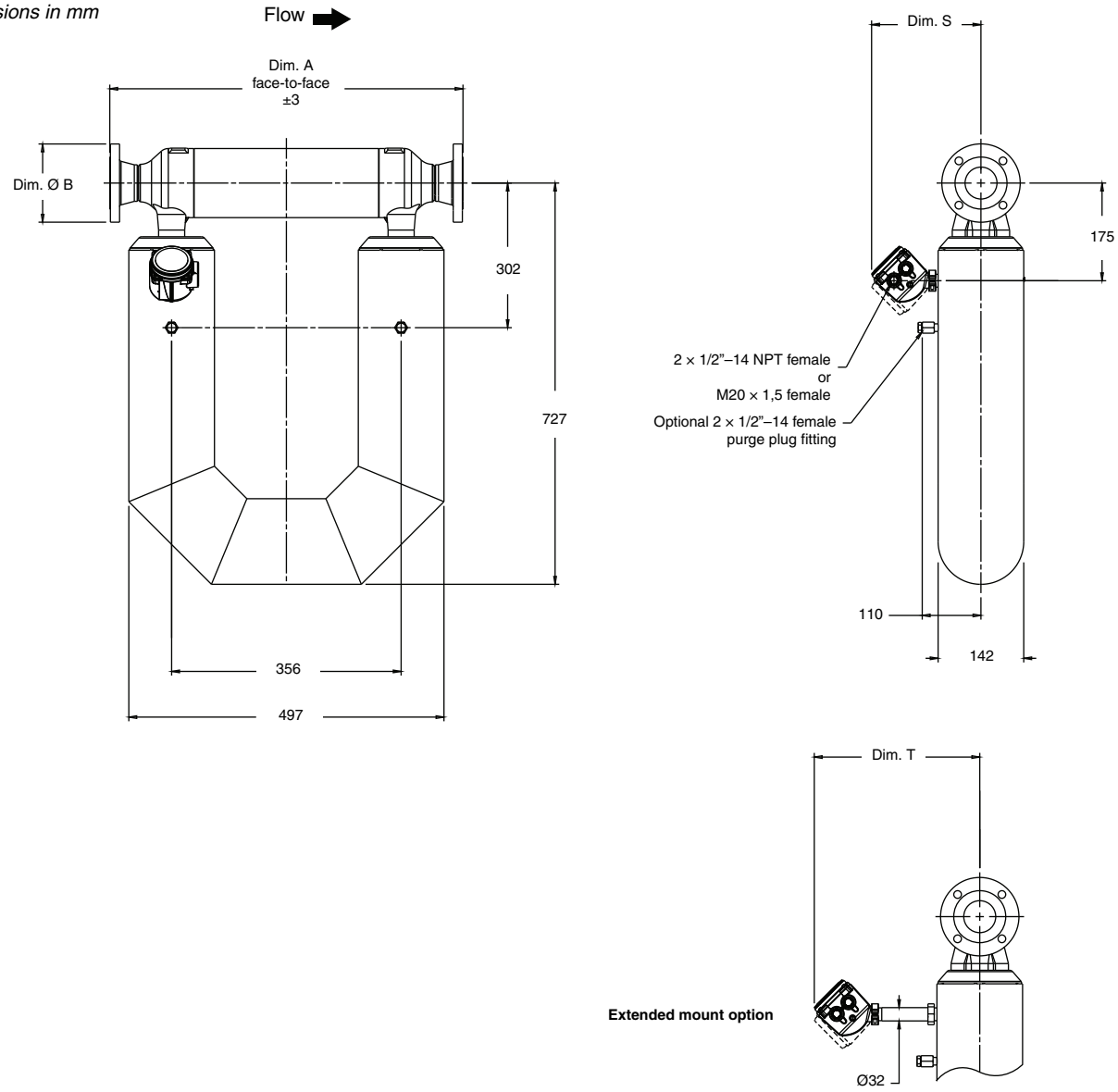
(1) For dimensions A and B, see fittings tables on pages 16–20.

(2) Dimensions S and T will vary depending on transmitter material option.

Dimensions *continued*

Model CMF200

Dimensions in mm



	Dimensions[1]	
Model	**S[2]**	**T[2]**
CMF200	232 – 239	368 – 372

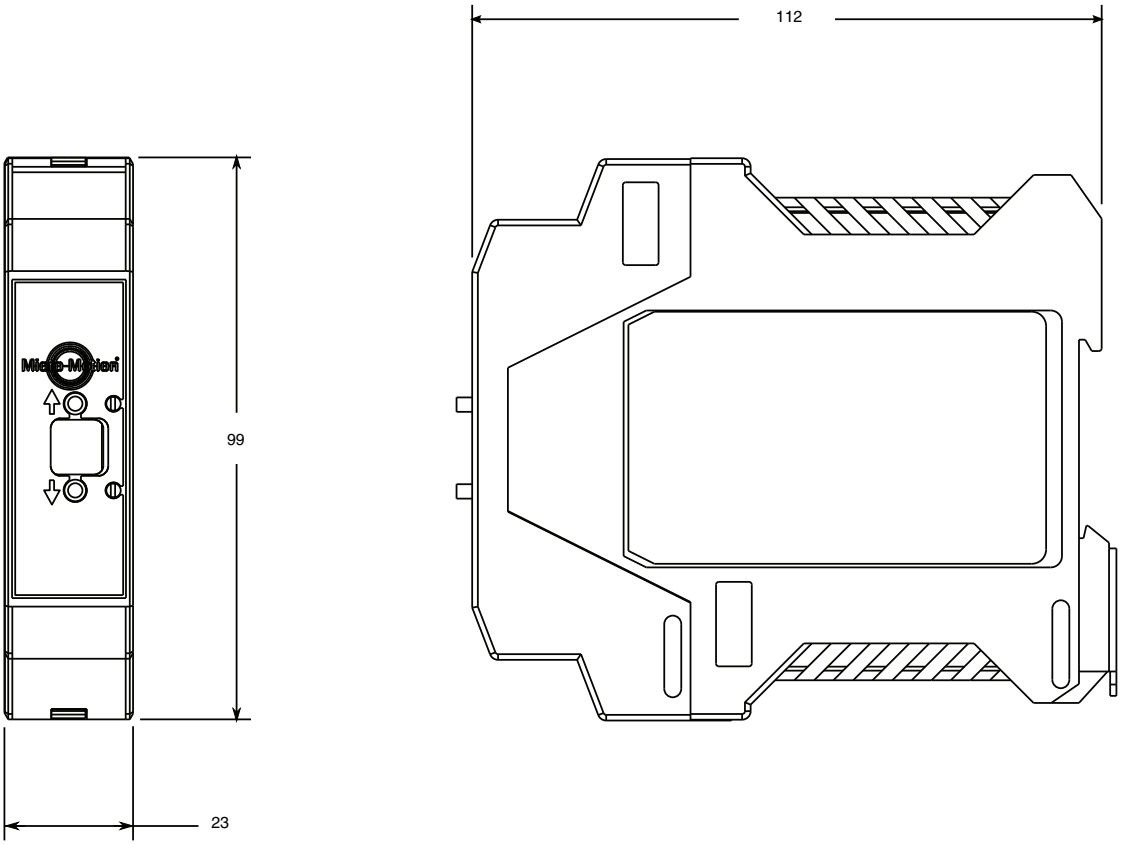
(1) For dimensions A and B, see fittings tables on pages 16–20.

(2) Dimensions S and T will vary depending on transmitter material option.

Dimensions *continued*

Adapter-barrier

Dimensions in mm



Fitting options

	Fitting code	Dim. A face-to-face (mm)	Dim. B outside diameter (mm)
CMF025 fitting options[1]			
316L stainless steel sensors			
Wafer style; 1/2-inch ANSI (150 lb; 300 lb; 600 lb bolt kit)	009	60	46
Wafer style, 15mm DIN 2526; type C face (PN40 bolt kit)	016	60	46
Wafer style; 15mm DIN 2512; type N grooved face (PN40 bolt kit)	017	60	46
Wafer style; 15mm DIN 2526; type E face (PN100 bolt kit)	018	60	46
Wafer style; 15mm DIN 2512; type N grooved face (PN100 bolt kit)	019	60	46
1/2-inch ANSI CL150 weld neck raised face flange	313	172	89
1/2-inch ANSI CL300 weld neck raised face flange	314	181	95
1/2-inch ANSI CL600 weld neck raised face flange	315	194	95
1/2-inch NPT female Swagelok size 8 VCO fitting	319	119	—
1/2-inch sanitary fitting (Tri-Clamp compatible)	321	119	25
DN15 PN40 weld neck flange; DIN 2635 type C face	300	160	95
DN15 PN40 weld neck flange; EN 1092-1 Form B1	176	160	95
DN15 PN40 weld neck flange; DIN 2635 type N grooved face	301	160	95
DN15 PN40 weld neck flange; EN 1092-1 Form D	310	160	95
DN15 PN100 weld neck flange; DIN 2637 type E face	302	176	105
DN15 PN100 weld neck flange; EN 1092-1 Form B2	177	176	105
DN15 PN100 weld neck flange; DIN 2637 type N grooved face	303	176	105
DN15 PN100 weld neck flange; EN 1092-1 Form D	178	176	105
DN25 PN40 weld neck flange; EN 1092-1 Form B1	172	164	115
DN25 PN40 weld neck flange; EN 1092-1 Form D	183	164	115
304L stainless steel sensors			
1/2-inch ANSI CL150 weld neck raised face flange	413	172	89
1/2-inch ANSI CL300 weld neck raised face flange	414	181	95
DN15 PN40 weld neck flange; DIN 2526 type C face	423	160	95
DN15 PN40 weld neck flange; EN 1092-1 Form B1	421	160	95
Nickel alloy sensors			
1/2-inch ANSI CL150 lap joint flange	520	172	89
1/2-inch ANSI CL300 lap joint flange	521	181	95
DN15 PN40 lap joint flange; DIN 2656 type C face	523	186	95
DN15 PN40 lap joint flange; EN 1092-1 Form B1	524	186	95

(1) Fittings listed here are standard options. Other types of fittings are available. The face to face dimensions for any custom fittings ordered using a 998 or 999 fitting code are not represented in this table. It is necessary to confirm face to face dimensions of these fittings at time of ordering. Contact your local Micro Motion representative.

Fitting options *continued*

	Fitting code	Dim. A face-to-face (mm)	Dim. B outside diameter (mm)
CMF050 fitting options[1]			
316L stainless steel sensors			
Wafer style; 1/2-inch ANSI (150 lb; 300 lb; 600 lb bolt kit)	009	89	46
Wafer style; 15mm DIN 2526; type C face (PN40 bolt kit)	016	89	46
Wafer style; 15mm DIN 2512; type N grooved face (PN40 bolt kit)	017	89	46
Wafer style; 15mm DIN 2526; type E face (PN100 bolt kit)	018	89	46
Wafer style; 15mm DIN 2512; type N grooved face (PN100 bolt kit)	019	89	46
1/2-inch ANSI CL150 weld neck raised face flange	313	202	89
1/2-inch ANSI CL300 weld neck raised face flange	314	211	95
1/2-inch ANSI CL600 weld neck raised face flange	315	224	95
3/4-inch NPT female Swagelok size 12 VCO fitting	320	165	—
3/4-inch sanitary fitting (Tri-Clamp compatible)	322	165	25
DN15 PN40 weld neck flange; DIN 2635 type C face	300	191	95
DN15 PN40 weld neck flange; EN 1092-1 Form B1	176	191	95
DN15 PN40 weld neck flange; DIN 2635 type N grooved face	301	191	95
DN15 PN40 weld neck flange; EN 1092-1 Form D	310	191	95
DN15 PN100 weld neck flange; DIN 2637 type E face	302	205	105
DN15 PN100 weld neck flange; EN 1092-1 Form B2	177	205	105
DN15 PN100 weld neck flange; DIN 2637 type N grooved face	303	205	105
DN15 PN100 weld neck flange; EN 1092-1 Form D	178	205	105
DN25 PN40 weld neck flange; EN 1092-1 Form B1	172	195	115
DN25 PN40 weld neck flange; EN 1092-1 Form D	183	195	115
304L stainless steel sensors			
1/2-inch ANSI CL150 weld neck raised face flange	413	202	89
1/2-inch ANSI CL300 weld neck raised face flange	414	211	95
DN15 PN40 weld neck flange; DIN 2526 type C face	423	191	95
DN15 PN40 weld neck flange; EN 1092-1 Form B1	421	191	95
Nickel alloy sensors			
1/2-inch ANSI CL150 lap joint flange	520	202	89
1/2-inch ANSI CL300 lap joint flange	521	211	95
DN15 PN40 lap joint flange; DIN 2656 type C face	523	216	95
DN15 PN40 lap joint flange; EN 1092-1 Form B1	524	216	95

(1) Fittings listed here are standard options. Other types of fittings are available. The face to face dimensions for any custom fittings ordered using a 998 or 999 fitting code are not represented in this table. It is necessary to confirm face to face dimensions of these fittings at time of ordering. Contact your local Micro Motion representative.

Fitting options *continued*

	Fitting code	Dim. A face-to-face (mm)	Dim. B outside diameter (mm)
CMF100 fitting options[1]			
316L stainless steel sensors			
Wafer style; 1-inch ANSI (150 lb bolt kit)	010	102	64
Wafer style; 1-inch ANSI (300 lb; 600 lb bolt kit)	011	102	64
Wafer style; 25mm type C face (PN40 bolt kit)	020	102	64
Wafer style; 25mm DIN 2512 type N grooved face (PN40 bolt kit)	021	102	64
Wafer style; 25mm type E face (PN100 bolt kit)	022	102	64
Wafer style; 25mm DIN 2512; type N grooved face (PN100 bolt kit)	023	102	64
1-inch ANSI CL150 weld neck raised face flange	328	235	108
1-inch ANSI CL300 weld neck raised face flange	329	248	124
1-inch ANSI CL600 weld neck raised face flange	330	260	124
1 1/2-inch ANSI CL600 weld neck raised face flange	331	276	156
1-inch sanitary fitting (Tri-Clamp compatible)	339	213	50
DN25 PN40 weld neck flange; DIN 2635 type C face	306	211	115
DN25 PN40 weld neck flange; EN 1092-1 Form B1	179	211	115
DN25 PN40 weld neck flange; DIN 2635 type N grooved face	307	211	115
DN25 PN40 weld neck flange; EN 1092-1 Form D	311	211	115
DN25 PN100 weld neck flange; DIN 2637 type E face	308	246	140
DN25 PN100 weld neck flange; EN 1092-1 Form B2	180	246	140
DN25 PN100 weld neck flange; DIN 2637 type N grooved face	309	246	140
DN25 PN100 weld neck flange; EN 1092-1 Form D	181	246	140
304L stainless steel sensors			
1-inch ANSI CL150 weld neck raised face flange	415	235	108
1-inch ANSI CL300 weld neck raised face flange	416	248	124
DN25 PN40 weld neck flange; DIN 2526 type C face	424	217	115
DN25 PN40 weld neck flange; EN 1092-1 Form B1	422	217	115
Nickel alloy sensors			
1-inch ANSI CL150 lap joint flange	530	235	108
1-inch ANSI CL300 lap joint flange	531	248	124
DN25 PN40 lap joint flange; DIN 2656 type C face	533	243	115
DN25 PN40 lap joint flange; EN 1092-1 Form B1	534	243	115

(1) Fittings listed here are standard options. Other types of fittings are available. The face to face dimensions for any custom fittings ordered using a 998 or 999 fitting code are not represented in this table. It is necessary to confirm face to face dimensions of these fittings at time of ordering. Contact your local Micro Motion representative.

Fitting options *continued*

	Fitting code	Dim. A face-to-face (mm)	Dim. B outside diameter (mm)
CMF200 fitting options[1]			
316L stainless steel sensors			
1 1/2-inch ANSI CL150 weld neck raised face flange	341	581	127
1 1/2-inch ANSI CL300 weld neck raised face flange	342	594	156
1 1/2-inch ANSI CL600 weld neck raised face flange	343	606	156
2-inch ANSI CL150 weld neck raised face flange	418	581	152
2-inch ANSI CL300 weld neck raised face flange	419	594	165
2-inch ANSI CL600 weld neck raised face flange	420	600	165
1 1/2″ sanitary fitting (Tri-Clamp compatible)[2]	351	543	51
2″ sanitary fitting (Tri-Clamp compatible)[2]	352	543	64
DN40 PN40 weld neck flange; DIN 2635 type C face	381	551	150
DN40 PN40 weld neck flange; EN 1092-1 Form B1	368	547	150
DN40 PN40 weld neck flange; DIN 2635 type N grooved face	383	551	150
DN40 PN40 weld neck flange; EN 1092-1 Form D	312	547	150
DN40 PN100 weld neck flange; DIN 2637 type E face	377	587	170
DN40 PN100 weld neck flange; EN 1092-1 Form B2	363	580	170
DN40 PN100 weld neck flange; DIN 2637 type N grooved face	379	587	170
DN40 PN100 weld neck flange; EN 1092-1 Form D	366	580	170
DN50 PN40 weld neck flange; DIN 2635 type C face	382	557	165
DN50 PN40 weld neck flange; EN 1092-1 Form B1	369	553	165
DN50 PN40 weld neck flange; DIN 2635 type N grooved face	384	557	165
DN50 PN40 weld neck flange; EN 1092-1 Form D	316	553	165
DN50 PN100 weld neck flange; DIN 2637 type E face	378	598	195
DN50 PN100 weld neck flange; EN 1092-1 Form B2	365	593	195
DN50 PN100 weld neck flange; DIN 2637 type N grooved face	380	598	195
DN50 PN100 weld neck flange; EN 1092-1 Form D	367	593	195

(1) Fittings listed here are standard options. Other types of fittings are available. The face to face dimensions for any custom fittings ordered using a 998 or 999 fitting code are not represented in this table. It is necessary to confirm face to face dimensions of these fittings at time of ordering. Contact your local Micro Motion representative.

(2) Not available with high-temperature models CMF200A or CMF200B.

Fitting options *continued*

	Fitting code	Dim. A face-to-face (mm)	Dim. B outside diameter (mm)
CMF200 fitting options[1]			
304L stainless steel sensors			
1 1/2-inch ANSI CL150 weld neck raised face flange	441	581	127
1 1/2-inch ANSI CL300 weld neck raised face flange	442	594	156
2-inch ANSI CL150 weld neck raised face flange	518	581	152
2-inch ANSI CL300 weld neck raised face flange	519	597	165
DN40 PN40 weld neck flange; DIN 2526 type C face	481	551	150
DN40 PN40 weld neck flange; EN 1092-1 Form B1	457	547	150
DN50 PN40 weld neck raised face flange; DIN 2526 type C face	482	557	165
DN50 PN40 weld neck raised face flange; EN 1092-1 Form B1	458	553	165
Nickel alloy sensors			
1 1/2-inch ANSI CL150 lap joint flange	540	581	127
1 1/2-inch ANSI CL300 lap joint flange	541	594	156
2-inch ANSI CL150 lap joint flange	544	581	152
2-inch ANSI CL300 lap joint flange	545	594	165
DN40 PN40 lap joint flange; DIN 2656 type C face	543	551	150
DN40 PN40 lap joint flange; EN 1092-1 Form B1	548	551	150
DN50 PN40 lap joint flange; DIN 2656 type C face	547	557	165
DN50 PN40 lap joint flange; EN 1092-1 Form B1	549	557	165

(1) Fittings listed here are standard options. Other types of fittings are available. The face to face dimensions for any custom fittings ordered using a 998 or 999 fitting code are not represented in this table. It is necessary to confirm face to face dimensions of these fittings at time of ordering. Contact your local Micro Motion representative.

Ordering information

ELITE Sensor

Model	Product Description
CMF025M	Micro Motion Coriolis ELITE sensor; 6 to 13 mm; 316L stainless steel
CMF025H	Micro Motion Coriolis ELITE sensor; 6 to 13 mm; Hastelloy C-22
CMF025L	Micro Motion Coriolis ELITE sensor; 6 to 13 mm; 304L stainless steel
CMF050M	Micro Motion Coriolis ELITE sensor; 13 to 25 mm; 316L stainless steel
CMF050H	Micro Motion Coriolis ELITE sensor; 13 to 25 mm; Hastelloy C-22
CMF050L	Micro Motion Coriolis ELITE sensor; 13 to 25 mm; 304L stainless steel
CMF100M	Micro Motion Coriolis ELITE sensor; 25 to 50 mm; 316L stainless steel
CMF100H	Micro Motion Coriolis ELITE sensor; 25 to 50 mm; Hastelloy C-22
CMF100L	Micro Motion Coriolis ELITE sensor; 25 to 50 mm; 304L stainless steel
CMF200M	Micro Motion Coriolis ELITE sensor; 50 to 75 mm; 316L stainless steel
CMF200H	Micro Motion Coriolis ELITE sensor; 50 to 75 mm; Hastelloy C-22
CMF200L	Micro Motion Coriolis ELITE sensor; 50 to 75 mm; 304L stainless steel
Code	**Process Connections**
###	See process fitting options on pages 16–20.
Code	**Case Options**
N	Standard pressure containment
P	Purge fittings (two 1/2-inch NPT female)
Code	**Electronics Interface**
J	Integrally mounted Model 2200S transmitter
U	Extended mount Model 2200S transmitter
Code	**Conduit Connections**
A(1)	Not applicable
Code	**Approvals**
M	Micro Motion Standard (no approval)
N	Micro Motion Standard / PED compliant
A	CSA (U.S.A. and Canada)
V	ATEX — Equipment Category 3 (Zone 2) / PED compliant
Z	ATEX — Equipment Category 2 (Zone 1) / PED compliant
I	IECEx Zone 1
3	IECEx Zone 2
Code	**Language**
E	English installation manual
Code	**Calibration options**
Z	0,10% mass flow and 0,5 kg/m^3 density
Code	**Measurement application software**
Z	No measurement application software
Code	**Factory options**
Z	Standard product
X	ETO product
Typical Model Number: CMF050M 313 N J A Z E Z Z Z	

(1) Select code A here and select actual conduit connections on page 22.

Ordering information *continued*

Model 2200S transmitter

Model	Product description
2200S	Micro Motion Coriolis 2-wire MVD transmitter
Code	**Mounting/housing material**
I	Integral-mount transmitter / Polyurethane-painted aluminum
J[1]	Integral-mount transmitter / 316L stainless steel
Code	**Output options / Power supply**
H	One 12–20 mA output with HART/Bell 202
K	One 4–20 mA output with HART/Bell 202, supplied with Micro Motion adapter-barrier
Code	**I/O terminations**
1	Compression screw terminals
Code	**Display**
1	Dual-line display for process variables and totalizer reset, glass lens
4[2]	Dual-line display for process variables and totalizer reset, non-glass lens
Code	**Conduit connections**
B	1/2-inch NPT — no gland
C	1/2-inch NPT with brass/nickel cable gland
D	1/2-inch NPT with stainless steel cable gland
E	M20 — no gland
F	M20 with brass/nickel cable gland
G	M20 with stainless steel cable gland
Code	**Approvals**
M	Micro Motion standard (no approval)
A	CSA (U.S.A. and Canada)
Z	ATEX Zone 1
L	ATEX Zone 2
I	IECEx Zone 1
3	IECEx Zone 2
Code	**Language**
E	English installation manual and English configuration manual
Code	**Software options 1**
Z	No software options 1
Code	**Software options 2**
Z	No software options 2
Code	**Factory options**
Z	Standard product
X	ETO product
Typical model number: 2200S I H 1 1 B Z E Z Z Z	

(1) Not recommended for truck-mount.

(2) Available only with Approval Code M.

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